

Description of new *Chimarra* (Trichoptera: Philopotamidae) species from the Solomon Islands

KJELL ARNE JOHANSON^{1,3} & MARIANNE ESPELAND^{1,2}

¹Entomology Department, Swedish Museum of Natural History, Box 50007, SE-104 05 Stockholm, Sweden.

E-mail: kjell.arne.johanson@nrm.se

²Zoological Institute, University of Stockholm, SE-106 09 Stockholm, Sweden. E-mail: marianne.espeland@nrm.se

³Corresponding author

Abstract

Nine new species of *Chimarra* (Philopotamidae) are described from the Solomon Islands. *Chimarra maculata*, *C. veveensis*, *C. babarensis*, and *C. ventrospina* are described from Kolombangara Island; and *C. talinensis*, *C. kolombangensis*, *C. vitapinensis*, *C. solomonensis*, and *C. rosavensis* were described from both Guadalcanal Island and Kolombangara Island. *Chimarra biramosa* Kimmins was collected from both Kolombangara Island and Guadalcanal Island.

Key words: Trichoptera, Philopotamidae, *Chimarra*, Solomon Islands, new species

Introduction

The Solomon Islands constitute an archipelago of volcanic Melanesian islands located immediately east of Papua New Guinea and north of the Vanuatu Islands. Most of the terrestrial parts of the islands are covered by rainforest and have stable yearly temperature well above 20°C. There are no distinct dry periods but the precipitation is clearly higher between December and April than over the rest of the year, and a high number of permanent streams and rivers drain the interior highlands of most of the islands. In general, the volume of rainfall is higher along the eastern coasts compared to the western coasts (Taylor & Maffi 1978). The caddisfly (Trichoptera) fauna of the Solomon Islands is poorly known, with only 16 described species in 8 families, all of which can be ecologically associated with running water. Permanent freshwater habitats on the islands are possibly of Miocene age, since Strandberg and Johanson (in press) argued from molecular data that *Apsilochorema* caddisflies (Hydrobiosidae) from the Solomon Islands separated from the mainland Oriental sister species about 16 million years ago. The first caddisfly species described from the country was *Anisocentropus solomonis* Banks, 1939 (Calamoceratidae). Only two subsequent papers were published on the islands' Trichoptera fauna, namely one on the Guadalcanal Trichoptera by Kimmins (1957) and one on Hydropsychidae published by Oláh *et al.* (2006). Twelve of the 16 previously described species from the islands were described by Kimmins (1957) based on material collected by J. D. Bradley on the Guadalcanal Island nearly 60 years ago. Among the families included in the work by Kimmins was the Philopotamidae, a group presently divided into three monophyletic subfamilies (Blahnik, 1998), with the genus *Chimarra* Stephens, 1829, is classified in the Chimarrinae. With about 650 described species globally, *Chimarra* constitutes the second largest caddisfly genus in terms of species diversity, surpassed only by *Rhyacophila* Pictet, 1834 (Rhyacophilidae), and is known from all biogeographical regions except Antarctica. About 2/3rds of the species in *Chimarra* are restricted to the Neotropical and Oriental biogeographical regions, and the lowest diversity (less than 3% of the species) is in the Palaearctic biogeographical region. In all, 63 *Chimarra* species have previously been described from the Australasian Biogeographical Region (28 from Australia, 27 from New Guinea, 5 from the Fiji Islands, 2 from the Solomon Islands and 1 from New Caledonia). Adults of

Chimarra species are distinguished from species in other philopotamid genera by a set of diagnostic morphological features (Blahnik, 1998), including spur formula 1,4,4 and hind wings with the A2 vein looped to join the A1 vein, forming a closed cell. The species of the genus *Chimarra* form 4 subgenera, with subgenus *Chimarra* distributed worldwide and subgenera *Chimarrita*, *Curgia*, and *Otarrha* restricted to the Neotropical Region, with a few species of the subgenus *Curgia* also recorded from the Nearctic Region. The species of the Australasian Region all belong to the subgenus *Chimarra*.

The Philopotamidae from the Solomon Islands are represented by two previously described species: *Chimarra* (*Chimarra*) *aureofusca* Kimmins, 1957, and *Chimarra* (*Chimarra*) *biramosa* Kimmins, 1957. The latter species was recorded also from Papua New Guinea (Cartwright 2001).

One of us (ME) collected Trichoptera from 22 localities on Kolombangara Island and Guadalcanal Island in January 2008. In the collected material the Philopotamidae were represented only by the genus *Chimarra*, and nine undescribed species were identified, which are described below.

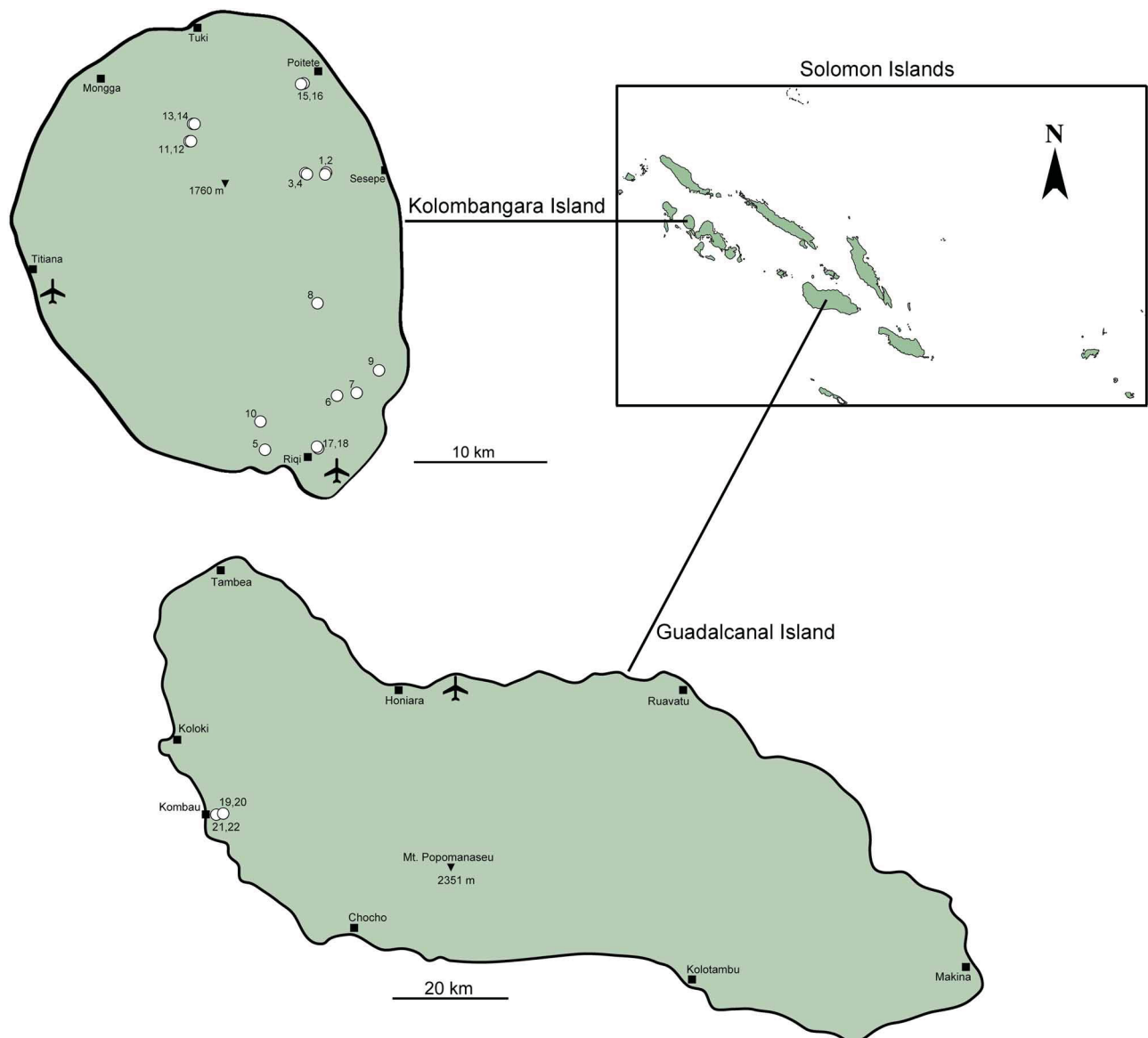


FIGURE 1. Map of Solomon Islands with sampling localities #1–22 on Kolombangara Island and Guadalcanal Island.

Material and methods

Trichoptera were collected in light traps at 21 different localities and a Malaise trap at one locality on the 2 islands, Kolombangara (Western Province) and Guadalcanal (Guadalcanal Province), during 7–26 January

2008. Kolombangara Island, located immediately northwest of New Georgia Island, is nearly circular, with the central summit of Mt. Veve reaching 1760 meters above sea level. The island is about 33.5 km long and 28 km wide and the many and evenly distributed streams drain the summit from all sides. Trichoptera were collected from 18 localities on the island. With about 6,500 km² the area of Guadalcanal Island is nearly 10 times larger than that of Kolombangara. The island is nearly S-shaped, with a central rugged and S-shaped mountain ridge reaching about 2,330 meters above sea level at the summit of Mt. Popomanaseu. Trichoptera were collected from 4 localities on the island. The Malaise trap was active for 4 days before being taken down. The light traps operated for about 3 hours at each locality from immediately after sunset. The localities are listed in Table 1. All material is stored in 80% ethanol at the Swedish Museum of Natural History (Stockholm, Sweden).

The right fore and hind wings of all identified species were mounted on a temporary microscope slide and photographed using an Olympus DP70 digital camera mounted on an Olympus SZX12 stereomicroscope. The abdomens were cleared in ProteinaseK—which also generated DNA extracts—followed by final maceration in hot 8% KOH for half an hour. Alternatively, the abdomens were macerated in hot KOH only. The abdomens were dehydrated in absolute alcohol and mounted in Euparal on a microscope slide before examination and drawing. All drawings were produced by using a drawing tube mounted on a Leitz Ortholux II light microscope. After illustration, the genitalia were transferred to ethanol in a microvial together with the rest of the specimen. The illustrations were completed on drawing film, scanned at 600 dpi greyscale, and mounted onto plates in Adobe® Photoshop® 8.0. The records were plotted on maps from Map Resources using the iMap®2 software.

Terminology for genitalic structures follows that of Blahnik (1998).

Key to males of *Chimarra* from the Solomon Islands

- 1 Forewings and hind wings each with large, pale, central hyaline field (Fig. 2) *C. maculata* **sp. n.**
- Forewings and hind wings without hyaline fields (Figs 3–10)..... 2
- 2 (1') Sternite IX with ventral process (Figs 11, 16) 3
- Sternite IX without ventral process (Figs 21, 26, 31, 36, 41, 46, 51) 4
- 3 (2') Sternite IX with ventral process much longer than wide (Fig. 16) *C. talinensis* **sp. n.**
- Sternite IX with ventral process about as long as wide (Kimmins, 1957, fig. 5A) *C. biramosa* Kimmins
- 4 (2') Inferior appendages 2 or more times longer than broad in lateral view (Figs 21, 26, 31, 36) 5
- Inferior appendages less than 2 times as long as broad in lateral view (Figs 41, 46, 51) 8
- 5 (4') Segment IX strongly produced anterad, forming narrow plate in lateral view (Figs 21, 26); inferior appendages slender, nearly straight (Figs 21, 26)..... 6
- Segment IX only slightly produced anterad, forming broad lobes in lateral view (Figs 31, 36); inferior appendages each with basal half broad, distal half slender and bent posterad (Fig. 31, 36) 7
- 6 (5') Forewing Rs curved immediately basal of Dc (Fig. 4); lateral branches of tergum X narrowly separated basally in dorsal view (Fig. 22); basodorsal projection of phallobase about 1/3rd as long as total length of phallobase (Fig. 24) *C. veveensis* **sp. n.**
- Forewing Rs rectangular immediately basal of Dc (Fig. 5); lateral branches of tergum X widely separated basally in dorsal view (Fig. 27); basodorsal projection of phallobase about 1/2 as long as total length of phallobase (Fig. 29) *C. kolombangensis* **sp. n.**
- 7 (5') Forewing fork 1 originating opposite fork 2 on Dc (Fig. 6); Rs rounded immediately basal of Dc (Fig. 6); fork 5 originating basal of origin of Dc (Fig. 6); inferior appendages crossing above tergum X (Fig. 32), although position may vary; lateral lobes of tergum X each with prominent lateral branch (Fig. 32) *C. babarensis* **sp. n.**
- Forewing fork 1 originating basally of fork 2 on Dc (Fig. 7); Rs nearly straight immediately basal of Dc (Fig. 7); fork 5 originating opposite base of Dc (Fig. 7); inferior appendages not crossing above tergum X (Fig. 37), although position may vary; lateral lobes of tergum X without lateral branches (Fig. 37) *C. vitapinensis* **sp. n.**
- 8 (4') Tergum X forming pair of wide, setose triangular lobes in lateral and dorsal views (Kimmins 1957, figs 6A, 6B); each lobe with 2 long, slender, up-curving processes (Kimmins 1957, fig. 6A) *C. aureofusca* Kimmins
- Tergum X forming pair of slender processes in dorsal view, without lateral branches (Figs 42, 47, 52) 9
- 9 (8') Segment IX higher than long in lateral view (Fig. 41); inferior appendages apically rounded (Fig. 41); basodorsal

- projection of phallobase more than half as long as total length of phallobase (Fig. 44); phallobase with posteroventral apex spine-like (Fig. 44) *C. ventrospina* **sp. n.**
- Segment IX longer than high in lateral view (Figs 46, 51); inferior appendages apically pointed (Figs 46, 51); basodorsal projection of phallobase half as long as total length of phallobase, or shorter (Figs 49, 54); phallobase without spine-like ventral apex (Figs 49, 54) 10
- 10 (9') Inferior appendages triangular in lateral view (Fig. 46)..... *C. solomonensis* **sp. n.**
- Inferior appendages nearly quadrangular in lateral view (Fig. 51) *C. rosavensis* **sp. n.**

Systematics

Chimarra maculata, new species

Figs 2, 11–15

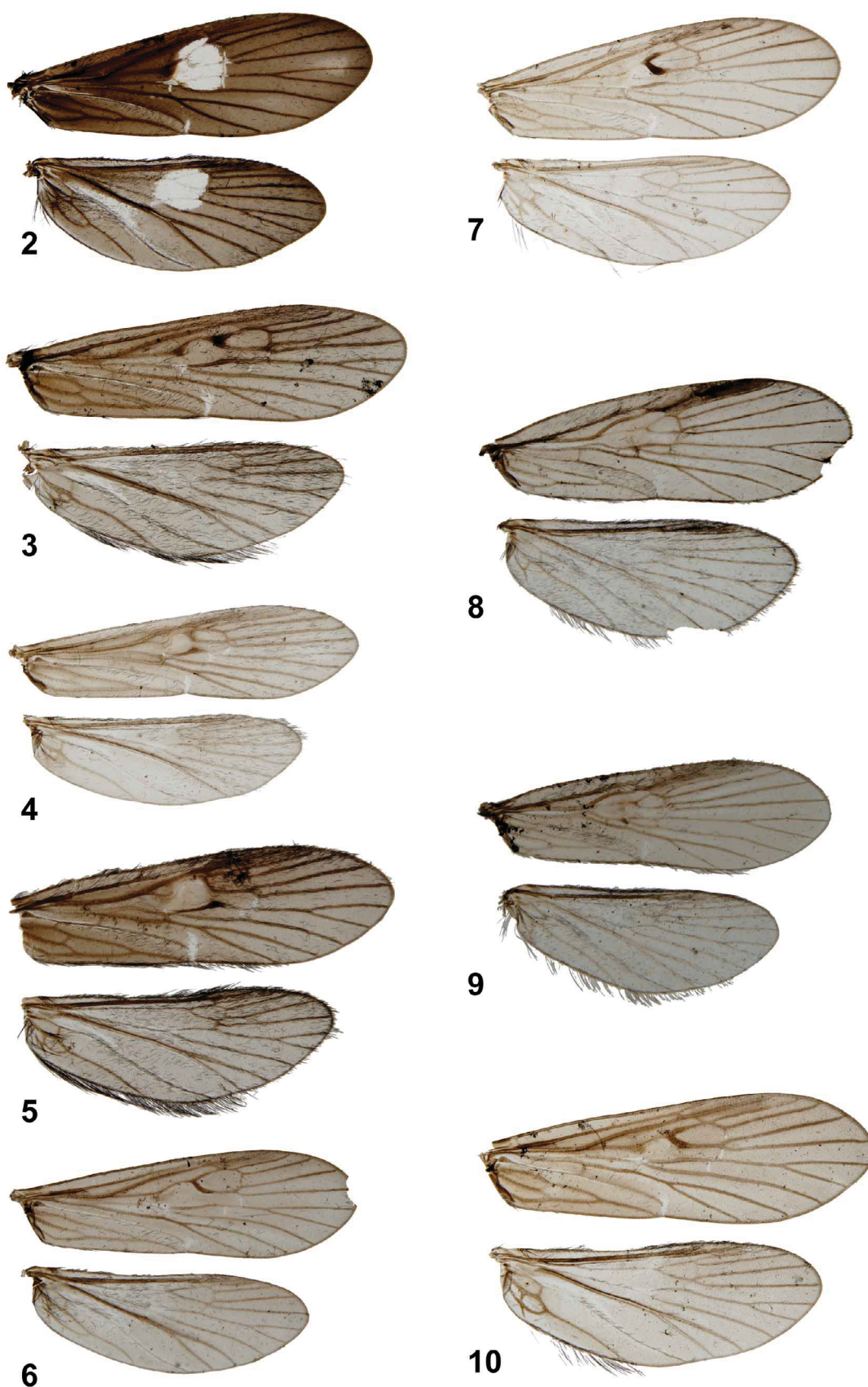
Diagnosis: This species is unique among the *Chimarra* of the Solomon Islands in having dark forewings and hind wings, each with a large, nearly circular, whitish hyaline field centrally on the wing area. Another species in the genus, *C. formosae* Botosaneanu & Vos, 2006, from West Papua (Indonesia), has similar wing pattern, except that the wing spots cover a larger proportion of the wing surface in *C. formosae*. In addition, the genitalia of *C. maculata* are completely different from those of *C. formosae*, particularly in the much more slender and nearly straight inferior appendages, and the presence of a ventral process on segment IX. Two Northern Territory Australian *Chimarra* species, *C. luminaris* Cartwright, 2002, and *C. locolo* Cartwright, 2002, also have a hyaline area centrally in each forewing. A similar hyaline area is present in each hind wing of *C. locolo*. In these 2 species, the hyaline areas are much smaller than in *C. maculata*, and the genitalia are different, i.e. in *C. maculata* a ventral process is present on sternite IX (absent in *C. luminaries* and *C. locolo*), the inferior appendages are nearly parallel sided and slender (broad in *C. luminaries* and strongly tapering apically in *C. locolo*), the superior appendages are circular (slender in *C. luminaries* and *C. locolo*), and the lateral lobe of tergum X is broad, long, and ventrad-curving (short, slender and nearly straight in *C. luminaries* and *C. locolo*)

Description: Wings (Fig. 2): Forewings each 6.8 mm long, membrane dark brown and veins nearly black; large, whitish, hyaline area present centrally in wing. Hind wings each 5.7 mm long, membrane brown, more grey posteriorly, veins dark brown; large, whitish, hyaline area present centrally in wing.

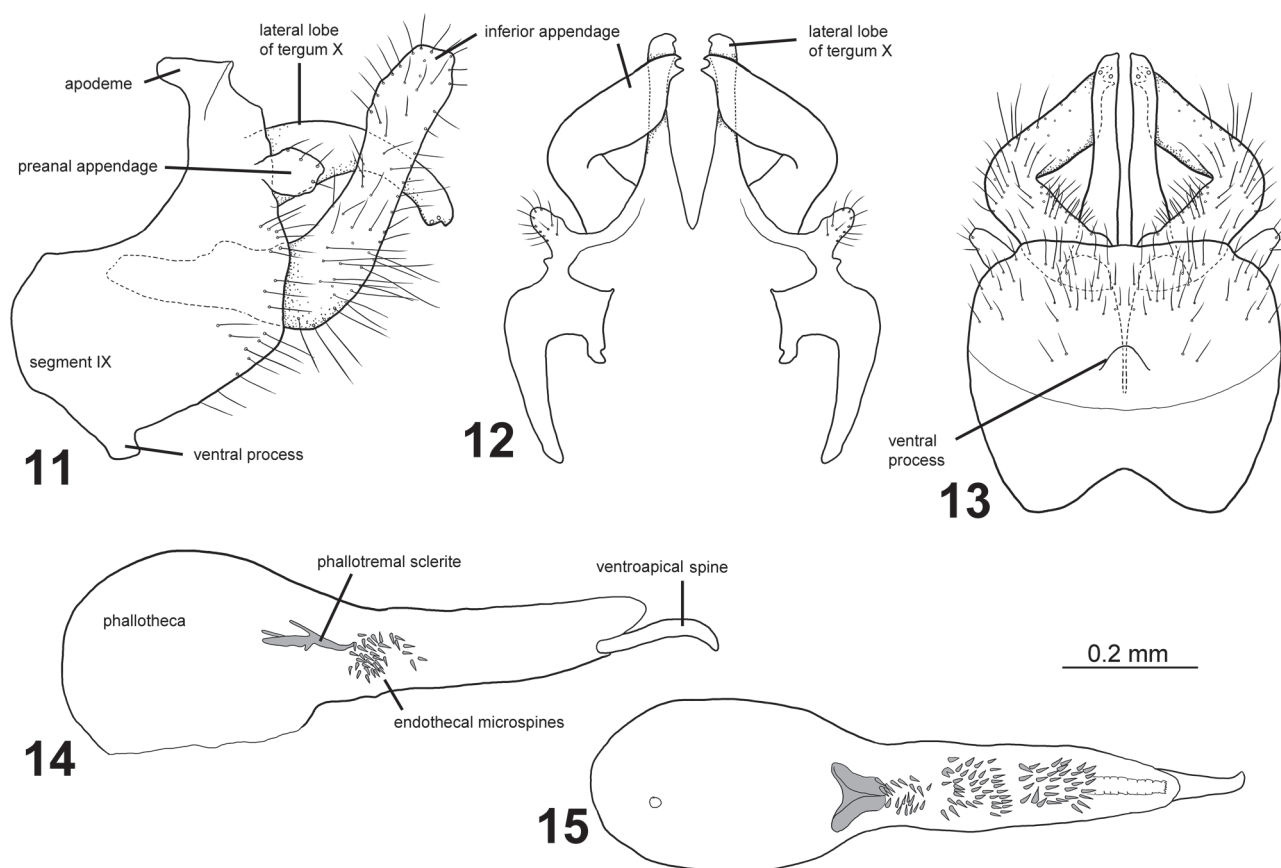
Male Genitalia (Figs 11–15): Sternite IX long, produced anterad into rounded plate in lateral view; in ventral view (Fig. 13) with convex lateral margins and straight posterior margin; setae restricted to posterior and posteroventral margins; anterior margins each with deep, triangular incision. Ventral process of sternite IX rectangular in lateral view (Fig. 11), rounded triangular in ventral view (Fig. 13). In lateral view, segment IX much shorter from about mid-height (Fig. 11). Tergite short in lateral view; central part membranous in dorsal view (Fig. 12). Pair of anterior apodemes about as long as ventral process (Fig. 11). Preanal appendages located immediately above mid-height of segment IX; rounded, setose; in dorsal view (Fig. 12) directed posterolaterad. Tergum X with pair of long, ventrad-curving lateral lobes; slightly narrowing apically in lateral view; in dorsal view nearly parallel-sided; without setae; 2 sensillae located dorsolaterally on apex of each lateral lobe. Inferior appendages fused basally on compressed central plate projecting horizontally anterad; curving dorsad before mid-length; distal 2/3rds of each appendage nearly straight in lateral view; curving mesad from mid-length and apices nearly meeting above tergum X (Fig. 12). Phallic apparatus long, with bulbous anterior half and tubular posterior half in lateral and ventral views (Figs 14, 15). Phallotremal sclerite complex with small processes in lateral view; nearly heart-shaped in ventral view; endotheca with many endothecal micro-spines inside distal part of retracted phallotheca; single, large ventroapical spine forming posterior continuation of phallobase.

Holotype male: Solomon Islands: Western Province, Kolombangara Island, N slope of Mt. Veve, 2.5 km S end of road L57, 723 m, loc 11, 7°55.494'S 157°02.986'E, light trap, 12.i.2008 [M Espeland].

Paratypes: Solomon Islands: 2 males, Western Province, Kolombangara Island, ENE slope, 1 km W end of road L28, 291 m, loc 01, 7°56.583'S 157°08.427'E, light trap, 7.i.2008 [M Espeland].



FIGURES 2–10. Right forewing and hind wing of holotypes of new *Chimarra* species. 2—*C. maculata*, new species; 3—*C. talinensis*, new species; 4—*C. veveensis*, new species; 5—*C. kolombangensis*, new species; 6—*C. babarensis*, new species; 7—*C. vitapinensis*, new species; 8—*C. ventrospina*, new species; 9—*C. solomonensis*, new species; 10—*C. rosavensis*, new species.



FIGURES 11–15. *Chimarra maculata*, new species, holotype, male. 11—genitalia, left lateral; 12—genitalia, dorsal; 13—genitalia, ventral; 14—phallic apparatus, left lateral; 15—phallic apparatus, ventral.

Etymology: *Maculata*, from *macula*, “spot” in Latin, referring to the pale wing spots in the forewings and hind wings of this species.

***Chimarra talinensis*, new species**

Figs 3, 16–20

Diagnosis: The presence of a prominent ventral process of segment IX and short tergum X, together with a characteristic shape of the inferior appendages, and number and size of endotheal spines makes this species unique among the Solomon Island *Chimarra* species. Several *Chimarra* species from New Guinea have a long ventral process, but in *C. talinensis*, this process is nearly as long as segment IX. In addition to having a long ventral process, *C. papuana* Kimmins, 1962, has inferior appendages divided into a broad basal part and a more narrow distal part, but in *C. talinensis*, the basal part is more rounded, and the distal part is thicker. In the phallic apparatus the retracted endothea has a very large endotheal spine as well as about 5 smaller spines. This combination of spines is not seen in similar species.

Description: Wings (Fig. 3): Forewings each 3.4 mm long, membrane greyish, more brownish near anterior margin and anal area; veins brown. Hind wings each 2.8 mm long, membrane uniformly greyish; veins brown.

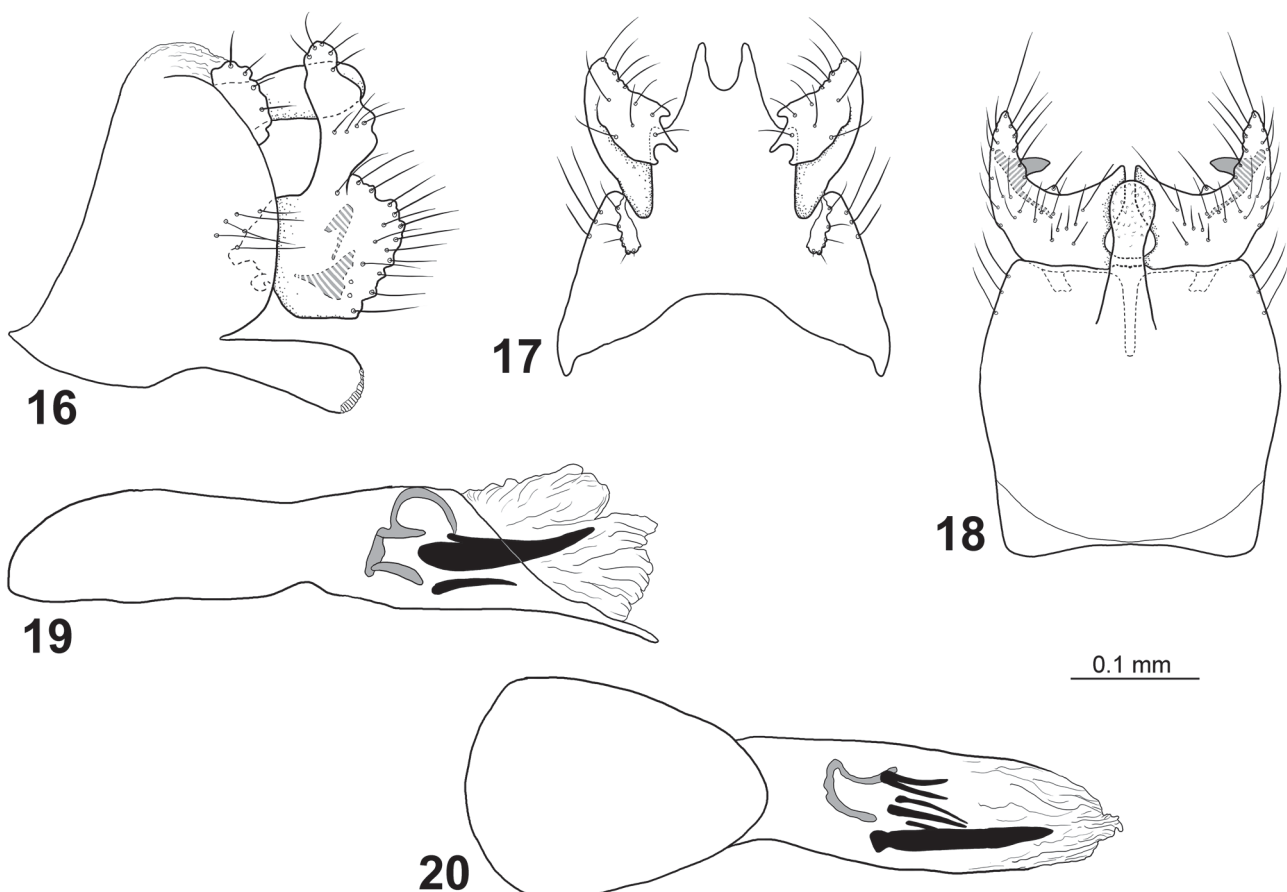
Male Genitalia (Figs 11–15): Sternite IX shorter than high, each side with anteroventral corner forming minute triangle in lateral view (Fig. 16); each anterior margin nearly straight above ventral triangular process; ventral margin weakly convex in lateral view; each posterior margin forming rounded plate with setae in small group; in ventral view (Fig. 18) with convex lateral margins and straight posterior margin; anterior margin weakly concave. Ventral process very large, nearly as long as segment IX in lateral view (Fig. 16); widening

along its length in lateral view; narrowing in ventral view (Fig. 18), with dilated apex. Tergite IX short in lateral view; central part sclerotized in dorsal view (Fig. 17). Anterior apodemes absent. Preanal appendages located dorsally on segment IX, about 0.05 mm long; in dorsal view (Fig. 17) directed posterad. Tergum X without setae; oval in lateral view; in dorsal view with basal half fused, forming broad, parallel-sided plate (Fig. 17); distal half narrowing towards apex; U-shaped incision separating pointed lateral lobes. Inferior appendages fused basally in short, irregular, compressed central plate (Fig. 16); each appendage with basal part very thick in lateral view; distal half forming narrow, dorsad-oriented lobe above segment X (Fig. 17); each inferior appendage with irregular posterior margin covered by stout setae. Sclerotized portion of phallic apparatus long, nearly cylindrical in lateral view (Fig. 19); in ventral view (Fig. 20) with broad, nearly triangular phallobase; posterior part of phallothea cylindrical; posteroventral margin of phallobase produced into long horizontal spine. Phallotremal sclerite complex with small, slender processes in lateral and ventral view; nearly U-shaped in ventral view; endotheca without micro-spines inside phallothea; single, large and about 5 small endothecal spines present apically in retracted phallothea.

Holotype male: Solomon Islands: Guadalcanal Province, Guadalcanal, Weather Coast, Kusumba Region, Talin River, 30 m S junction with Rosava River, 70 m, loc 19, 9°36.724'S 159°41.234'E, light trap, 25.i.2008 [M Espeland].

Paratypes: Solomon Islands: 1 male, same data as holotype; 1 male, Western Province, Kolombangara Island, ENE slope, 2.5 km W end of road L28, 421 m, loc 03, 7°56.629'S 157°07.603'E, light trap, 8.i.2008 [M Espeland].

Etymology: *Talinensis*, from Talin River, the type locality of the species.



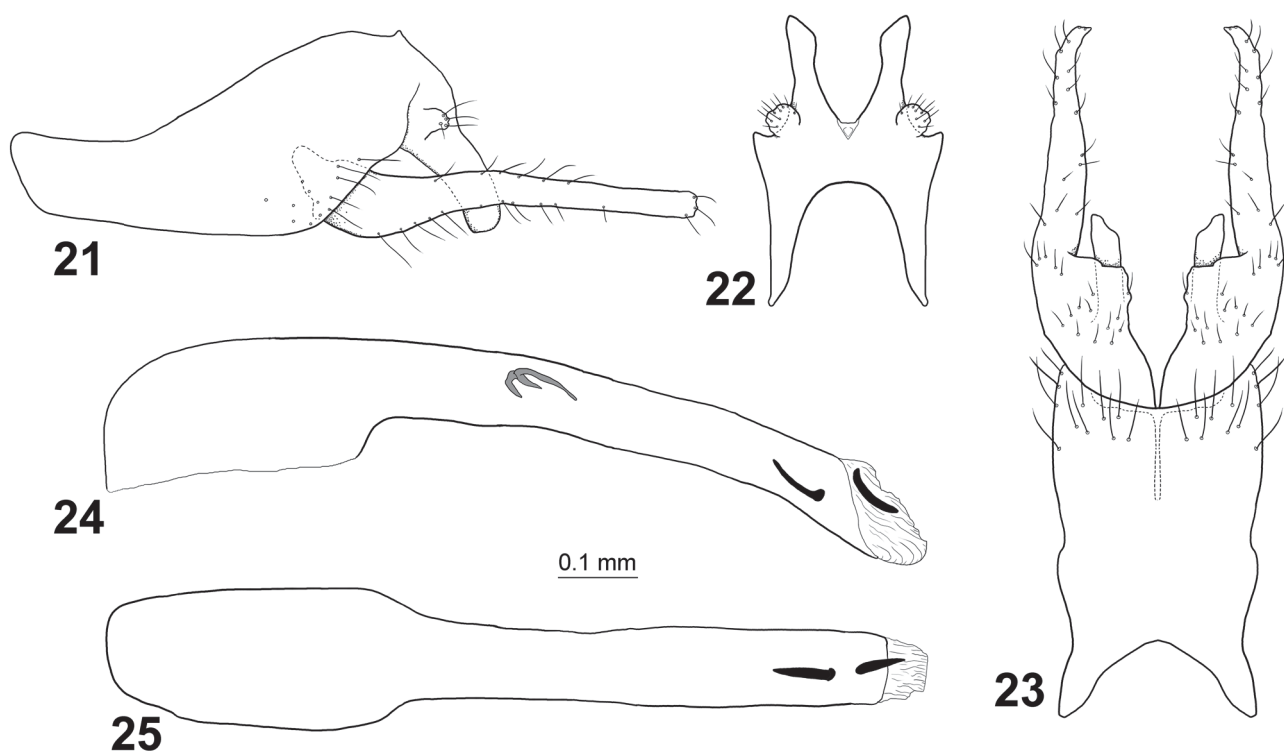
FIGURES 16–20. *Chimarra talinensis*, new species, holotype, male. 16—genitalia, left lateral; 17—genitalia, dorsal; 18—genitalia, ventral; 19—phallic apparatus, left lateral; 20—phallic apparatus, ventral.

***Chimarra veveensis*, new species**

Figs 4, 21–25

Diagnosis: The genitalia of *C. veveensis* are generally very long and slender, i.e. with strongly anteriorly produced ventral part of segment IX, the long and very slender inferior appendages, and slender phallic apparatus. In the Australian Region this combination of characteristics is only found in *C. kolombangensis* from the Solomon Islands (below). *Chimarra veveensis* is distinguished from *C. kolombangensis* by the genitalia in lateral view, particularly in segment IX the anterior part is broader, and in the more slender inferior appendages and the phallic apparatus and the phallotremal sclerite complex all being more slender, the more slender phallic apparatus, and the slender phallotremal sclerite complex.

Description: Wings (Fig. 4): Forewings each 4.2 mm long, membrane uniformly pale grey; veins pale brown. Hind wings each 3.4 mm long, membrane uniformly pale grey; veins brown.



FIGURES 21–25. *Chimarra veveensis*, new species, holotype, male. 21—genitalia, left lateral; 22—genitalia, dorsal; 23—genitalia, ventral; 24—phallic apparatus, left lateral; 25—phallic apparatus, ventral.

Male Genitalia (Figs 21–25): Segment IX very long with anteroventral region greatly produced (Fig. 21); anterodorsal margins concave, angled; ventral margin nearly straight in lateral view, without ventral process (Fig. 21); posterior margins nearly straight, each with small rounded protrusion above inferior appendage; setae restricted to posterior margins below mid-height; in ventral view (Fig. 23) with undulating, nearly parallel-sided lateral margins and evenly concave posterior margin, anterior margin deeply concave; in dorsal view (Fig. 22) slightly widening posteriorly, lateral margins pointed anteriorly, tergite anteriorly deeply concave, U-shaped; Ventral process absent (Fig. 21); tergite IX much shorter than sternite, with minute, triangular dorsal process near base of tergum X. Anterior apodemes absent. Preanal appendages located basally on tergum X, about 0.05 mm long, directed posterad; rounded in lateral and dorsal views (Figs 21, 22). Tergum X about half as long as inferior appendages, without setae, formed by pair of ventrad-curving lateral lobes separated from base of tergum X; nearly parallel-sided in lateral view (Fig. 21); in dorsal view narrowing from base to mid-length, nearly parallel-sided from mid-length; each lateral lobe with apex obliquely truncate, longer located laterally. Inferior appendages nearly straight along their length; basal plate compact, short (Fig. 21); basal 1/4th of inferior appendages slightly wider than distal three-quarters; each

inferior appendage parallel-sided from distal half in lateral view; in ventral view (Fig. 23) inferior appendages sub-parallel, each inferior appendage with broad meso-basal plate with right-angled posteromesal corner; appendage sharply narrower beyond this plate, with slightly mesad-curving apex. Sclerotized portion of phallic apparatus long, slender, phallothea nearly cylindrical from 2/5ths its length in lateral and ventral views (Figs 24, 25); phallobase about twice as thick as rest of phallothea in lateral and ventral views; posteroventral margin of phallothea produced into short horizontal spine. Phallotremal sclerite complex with small, slender processes in lateral view; not observed in ventral view; endothea without micro-spines, but with pair of short, subequal, curved, asymmetrically positioned spines in retracted phallothea.

Holotype male: Solomon Islands: Western Province, Kolombangara Island, N slope of Mt. Veve, 2.5 km S end of road L57, 723 m, loc 11, 7°55.494'S 157°02.986'E, light trap, 12.i.2008 [M Espeland].

Paratypes: Solomon Islands: 2 males, Western Province, Kolombangara Island, N slope Mt. Veve, 0.5 km S of road L57, 451 m, loc. 13, 7°54.872'S 157°03.146'E, light trap, 13.i.2008 [M Espeland].

Etymology. *Veveensis*, from Mt. Veve, the type locality of the species.

***Chimarra kolombangensis*, new species**

Figs 5, 26–30

Diagnosis. This species resembles *C. veveensis* (described above), particularly in the greatly produced anteroventral margin of segment IX, elongate inferior appendages, and elongate, slender phallobase. *Chimarra kolombangensis* is distinguished from *C. veveensis* in lateral view of the genitalia, by having a nearly triangular anteroventral part of segment IX, and the inferior appendages are shorter, with basal part more angular.

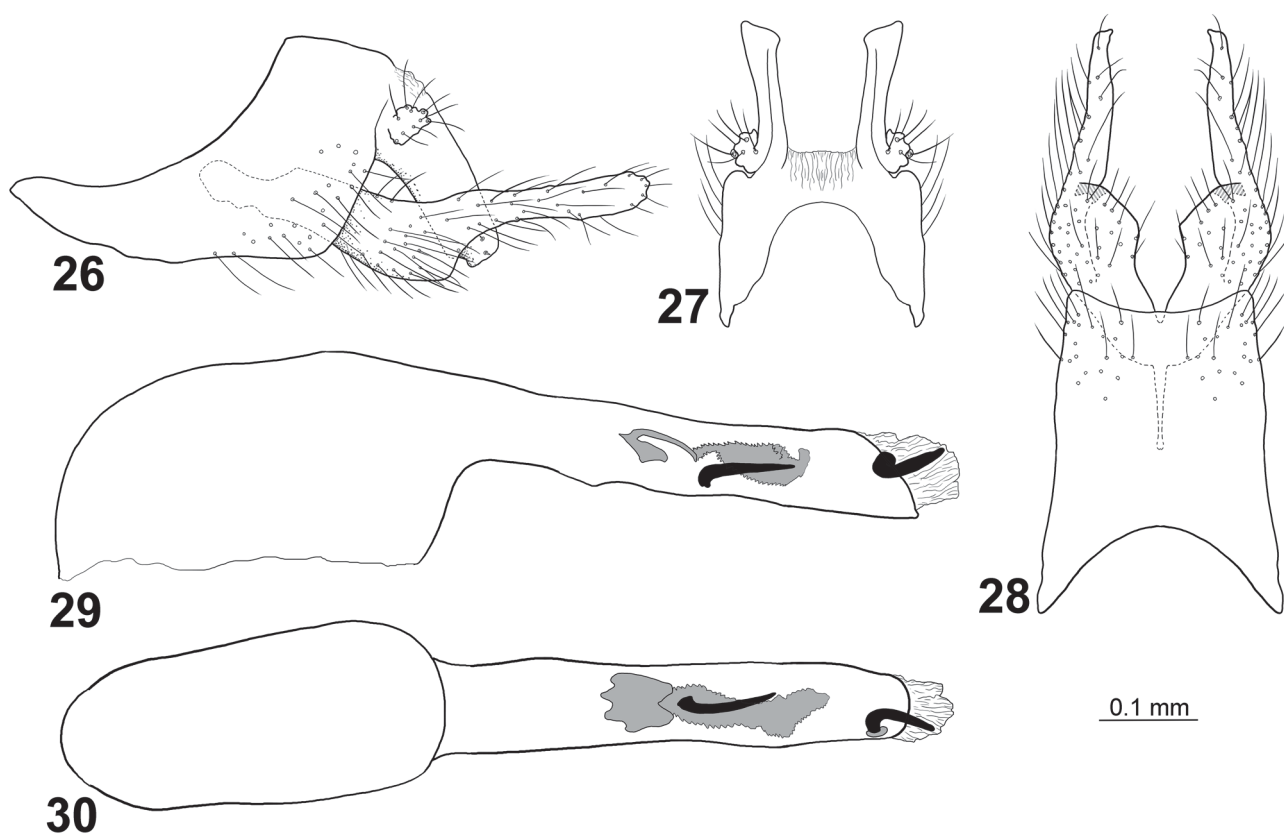
Description. Wings (Fig. 5): Forewings each 4.1 mm long, membrane pale grey, except brownish at basal half and along anterior margin; veins dark brown. Hind wings each 3.4 mm long, membrane uniformly grey; veins brown.

Male Genitalia (Figs 26–30): Segment IX very long, anteroventral part narrowly triangular in lateral view (Fig. 26); each anterodorsal margin concave, rounded; ventral margin slightly convex in lateral view and without ventral process; each posterior margin nearly straight, without outgrowth above inferior appendage; setae restricted to posterior margin below preanal appendages; in ventral view (Fig. 28) with nearly straight, nearly parallel-sided lateral margins and evenly concave posterior margin; anterior margin deeply concave; in dorsal view (Fig. 27) parallel-sided, lateral margins pointed anteriorly; tergite anteriorly deeply concave, U-shaped. Tergite IX short much shorter than sternite, without process near base of tergum X. Anterior apodemes absent. Preanal appendages located basally on tergum X, about 0.05 mm long, directed posterolaterad; irregularly rounded in lateral and dorsal views (Figs 26, 27). Tergum X about half as long as inferior appendages, without setae, formed by pair of thick, ventrad-curving lateral lobes being separated at base of tergum X; nearly parallel-sided in lateral view (Fig. 26); in dorsal view each lateral lobe parallel-sided along its length; each lateral lobe with apex obliquely truncate, longer laterally, with 2 of sensillae seen in lateral view. Inferior appendages nearly straight along their length; central plate compact, short (Fig. 26); basal half of each inferior appendage slightly wider than distal half; each inferior appendage parallel-sided from distal half in lateral view; in ventral view inferior appendages subparallel (Fig. 28), each inferior appendage with broad meso-basal plate with rounded posteromesal corner; appendage sharply narrower beyond this plate, slightly sigmoid, with slightly mesad-curving apex. Sclerotized portion of phallic apparatus long, slender, phallothea nearly cylindrical from half its length in lateral and ventral views (Figs 29, 30); phallobase about 3 times thicker than rest of phallothea in lateral view (Fig. 29), and twice as thick as rest of phallothea in ventral view (Fig. 30); posteroventral margin of phallothea produced into short horizontal spine. Phallotremal sclerite complex with thin dorsal and thick ventral plates in lateral view; in ventral view (Fig. 30) forming broad plate with 4 anterior lobes and 2 posterior lobes; minute spines densely packed immediately posteriorly of phallotremal sclerite inside retracted phallothea; pair of nearly equally large endotheal spines present apically in retracted phallothea, posterior spine more strongly curved than anterior spine.

Holotype male: Solomon Islands: Western Province, Kolombangara Island, Poitete River 200 m WSW Poitete on road L44, 103 m, loc 15, 7°53.440'S 157°07.516'E, light trap, 14.i.2008 [M Espeland].

Paratypes: : 2 males, same data as holotype; 17 males, , Western Province, Kolombangara Island, ENE slope, 1 km W end of road L28, 291 m, loc 01, 7°56.583'S 157°08.427'E, light trap, 7.i.2008 [M Espeland]; 1 male, Western Province, Kolombangara Island, ENE slope, 1 km W end of road L28, 291 m, loc 02, 7°56.583'S 157°08.427'E, light trap, 7.i.2008 [M Espeland]; 13 males, Western Province, Kolombangara Island, ENE slope, 2.5 km W end of road L28, 421 m, loc 03, 7°56.629'S 157°07.603'E, light trap, 8.i.2008 [M Espeland]; 1 male, Western Province, Kolombangara Island, stream between roads R3 and R3A, crossing main road 2 km N Shadow River, loc 10, light trap, 14.i.2008 [M Espeland]; 1 male, Western Province, Kolombangara Island, N slope of Mt. Veve, 2.5 km S end of road L57, 723 m, loc 11, 7°55.494'S 157°02.986'E, light trap, 12.i.2008 [M Espeland]; 12 males, Western Province, Kolombangara Island, Poitete River 200 m WSW Poitete on road L44, 99 m, loc 16, 7°53.375'S 157°07.529'E, light trap, 14.i.2008 [M Espeland]; 6 males, Western Province, Kolombangara Island, Vila River 1 km N Ringi Company Town, 70 m, loc 18, 8°06.382'S 157°07.916'E, light trap, 15.i.2008 [M Espeland]; 27 males, Guadalcanal Province, Guadalcanal, Weather Coast, Kusumba Region, Talin River, 30 m S junction with Rosava River, 70 m, loc 19, 9°36.724'S 159°41.234'E, light trap, 25.i.2008 [M Espeland].

Etymology. *Kolombangensis*, derived from Kolombangara Island, the type locality of the species.



FIGURES 26–30. *Chimarra kolombangensis*, new species, holotype, male. 26—genitalia, left lateral; 27—genitalia, dorsal; 28—genitalia, ventral; 29—phallic apparatus, left lateral; 30—phallic apparatus, ventral.

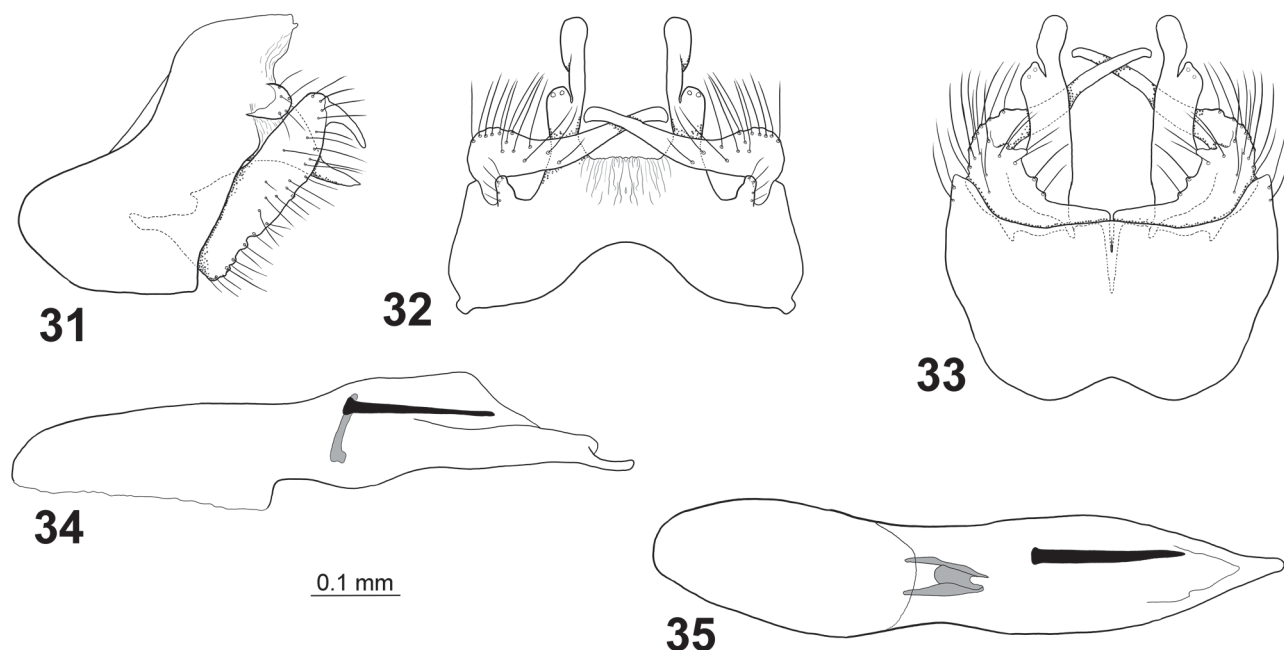
Chimarra babarensis, new species

Figs 6, 31–35

Diagnosis: This species has a unique genitalic morphology, involving a combination of tergum X located nearly as low as mid-height on genitalia, and very long inferior appendages with the distal half very slender

and bent mesally and crossing each other above tergum X. In addition, the phallic apparatus includes a single, large endothecal spine, and the posteroventral part of the phallothea forms an acutely narrowed, ventral projection.

Description: Wings (Fig. 5): Forewings each 4.0 mm long, membrane pale grey, except brownish at basal half and along anterior margin; veins dark brown. Hind wings each 3.3 mm long, membrane uniformly grey; veins brown.



FIGURES 31–35. *Chimarra babarensis*, new species, holotype, male. 31—genitalia, left lateral; 32—genitalia, dorsal; 33—genitalia, ventral; 34—phallic apparatus, left lateral; 35—phallic apparatus, ventral.

Male Genitalia (Figs 31–35): Segment IX rather short, each side with anteroventral part ellipsoid in lateral view (Fig. 31); each anterodorsal margin concave, rounded; ventral margin slightly convex and angled in lateral view, without ventral process; each posterior margin shallowly concave, with small outgrowth between inferior appendage and preanal appendage; few setae restricted to posterior margin below preanal appendages; in ventral view (Fig. 33) widening posteriorly, with convex lateral margins and widely and deeply concave posterior margin; anterior margin with shallow, triangular incision; in dorsal view (Fig. 32) with narrowing lateral margins, each lateral margin with minute rectangular anterior apex; tergite anteriorly concave, widely U-shaped. Tergite IX short, without process near basis of tergum X. Anterior apodemes absent. Preanal appendages located well below dorsal margin of segment IX (Fig. 31), dorsally and basally on tergum X, about 0.05 mm long, directed posterad; smoothly rounded in lateral view (Fig. 31), narrower in dorsal view (Fig. 32). Tergum X about half as long as inferior appendages, without setae, originating shortly above mid-height of segment IX; formed by pair of posteroventrad-oriented, sharply tapering lateral lobes (Fig. 31), widely separated at base of tergum X in dorsal view (Fig. 32); in dorsal view each lateral lobe running parallel; each lateral lobe with rounded lateral process with 2 apical sensillae; apex of each lateral lobe dilated, smooth. Inferior appendages with compact, short central plate (Fig. 31); basal half of each inferior appendage nearly straight, slightly narrowing; strongly bending mesad from mid-length, distal half tapering along its length, the 2 inferior appendages usually crossing above tergum X; in ventral view (Fig. 33) each inferior appendage with narrow mesobasal plate with irregular mesal margin. Sclerotized portion of phallic apparatus long, slender, phallothea nearly cylindrical from half its length in lateral view, and along its length in ventral view (Figs 34, 35); phallobase about as thick as rest of phallothea in lateral and ventral views (Figs 34, 35); posteroventral margin of phallothea strongly produced into slender horizontal spine in lateral view (Fig. 34),

this spine sharp and triangular in ventral view (Fig. 35). Phallotremal sclerite complex with single, nearly vertical plate in lateral view; in ventral view (Fig. 35) forming broad oblong plate with ray along each lateral margin; minute spines absent; single long, straight, posterad-oriented endothecal spine present immediately after phallotremal sclerite complex in retracted phallosome.

Holotype male: Solomon Islands: Western Province, Kolombangara Island, Babare River, 1 km W main road between roads L5 and L6, loc 09, light trap, 13.i.2008 [M Espeland].

Etymology. *Babarensis*, from Babare River, the type locality of the species.

***Chimarra vitapinensis*, new species**

Figs 7, 36–40

Diagnosis. The genitalia of *C. vitapinensis* are unique among Solomon Island *Chimarra* species, in particular segment IX is nearly drop-shaped in lateral view, the inferior appendages are sigmoid shaped in lateral view, and the membranous mesal lobe of tergum X is triangular in dorsal view. Some of the New Guinean *Chimarra* species have similar inferior appendages, like *C. papuana*, Kimmins, 1962, and *C. sabrona* Kimmins, 1962, but all these species have an anteriorly produced segment IX, and a large ventral process.

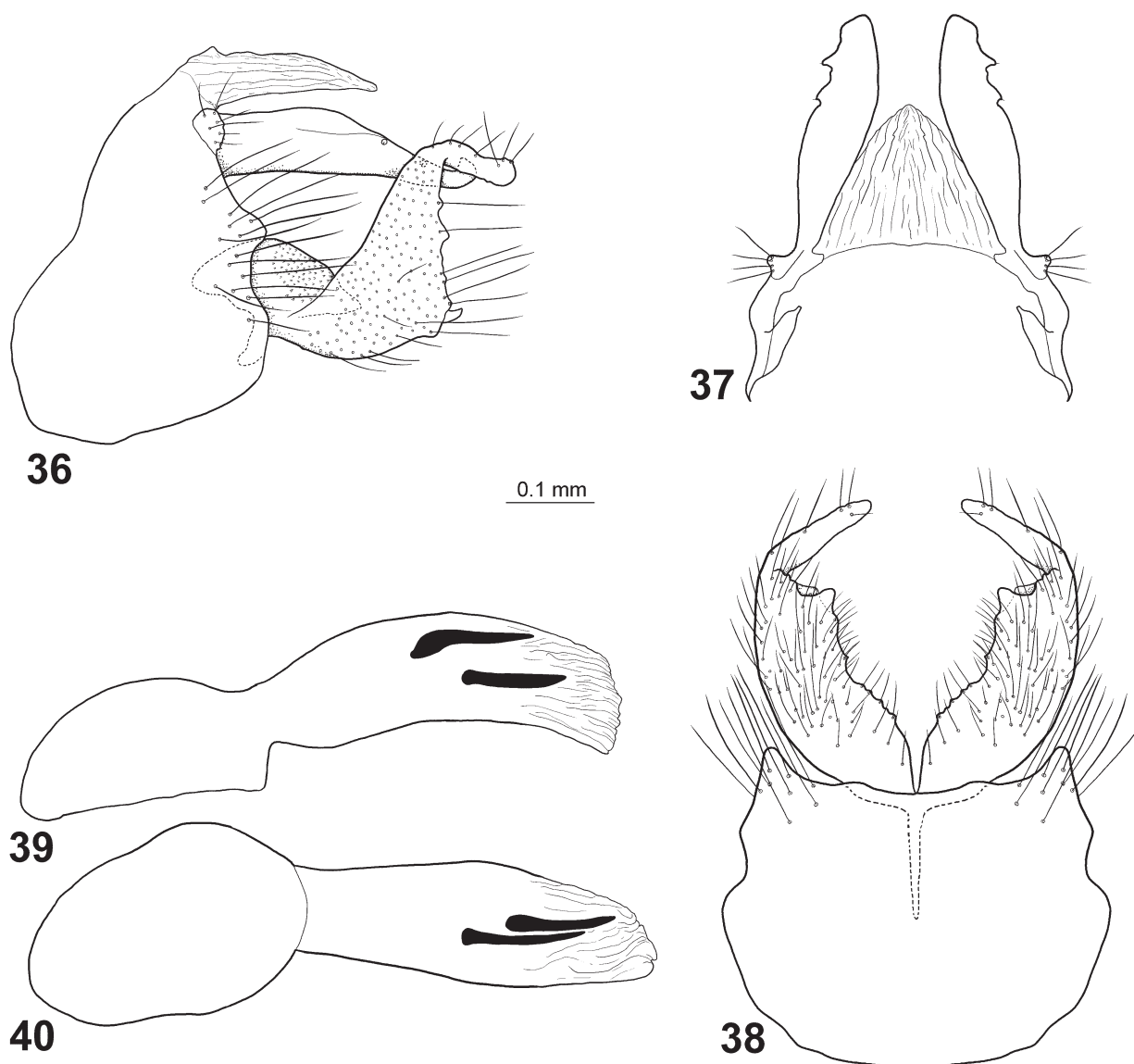
Description: Wings (Fig. 7): Forewings each 4.4 mm long, membrane uniformly pale grey; veins brown to dark brown; veins and neighbourhood membrane of basal part of Dc nearly black. Hind wings each 3.7 mm long, membrane uniformly pale grey; veins brown to dark brown.

Male Genitalia (Figs 36–40): Segment IX rather short, nearly drop-shaped, with anteroventral part ellipsoid in lateral view (Fig. 36); each anterodorsal margin undulated; ventral margin slightly convex and angled in lateral view, without ventral process; each posterior margin undulated, with rounded outgrowth immediately above inferior appendage; setae restricted to mid-height of posterior margin; in ventral view (Fig. 38) segment IX slightly narrowing posteriorly, with undulated lateral margins and widely and shallowly concave posterior margin; anterior margin convex, without mesal incision; in dorsal view (Fig. 37) with nearly parallel lateral margins, each lateral plate tapering at anterior apex; tergite membranous. Tergite IX short, without process near base of tergum X. Anterior apodemes absent. Preanal appendages located on posterior margin of segment IX well below dorsal margin (Fig. 36), about 0.05 mm long, directed dorsolaterad; smoothly rounded in lateral view (Fig. 36), narrower in dorsal view (Fig. 37). Tergum X divided into long, membranous mesal lobe and pair of sclerotized lateral lobes (Figs 39, 37). Mesal lobe sharply triangular in lateral view, about half as long as and located well above lateral lobes (Fig. 36), triangular in dorsal view (Fig. 37); about half as long as inferior appendages, without setae. Lateral lobes without setae, originating from near bases of preanal appendages; in lateral view (Fig. 36), each lateral lobe straight, with basal half parallel-sided, distal half tapering into up-curving apex; in dorsal view, lateral lobes straight, slightly converging; mesal margins slightly convex, lateral margins irregular along distal half, apex rounded (Fig. 37). Lateral lobes widely separated basally by mesal lobe; distal half of each lateral lobe with 2 sensillae along dorsal margin. Inferior appendages with compact, short central plate (Fig. 36); basal half of each inferior appendage nearly straight, oriented posteroventrad; lateral part bending dorsad to form vertical, narrowing plate, and long, cylindrical, posteromesad-oriented apex (Figs 36, 38); in ventral view (Fig. 38) each inferior appendage with long mesobasal plate with irregular mesal margin. Sclerotized portion of phallic apparatus long, slender; phallosome nearly cylindrical from before half its length in lateral and ventral views (Figs 39, 40); phallobase about as thick as rest of phallosome in lateral view, and twice as thick as rest of phallosome in ventral view; posteroventral margin of phallosome apparently not strongly produced posterad in lateral view (Fig. 39). Phallotremal sclerite complex not observed; pair of equally long, slightly curved endothecal spines present distally in retracted phallosome.

Holotype male: Solomon Islands: Guadalcanal Province, Guadalcanal, Weather Coast, Kusumba Region, small stream 400 m S Vutapinau Village, loc 22, 9°36.713'S 159°40.598'E, light trap, 26.i.2008 [M Espeland].

Paratypes: **Solomon Islands:** 11 males, same data as holotype; 4 males, Western Province, Kolombangara Island, stream crossing main road, 200 m N road L2, 158 m, loc 06, 8°04.520'S 157°08.845'E, Malaise trap, 11–15.i.2008 [M Espeland].

Etymology. *Vitapinensis*, derived from Vitapinau Village, the type locality of the species.



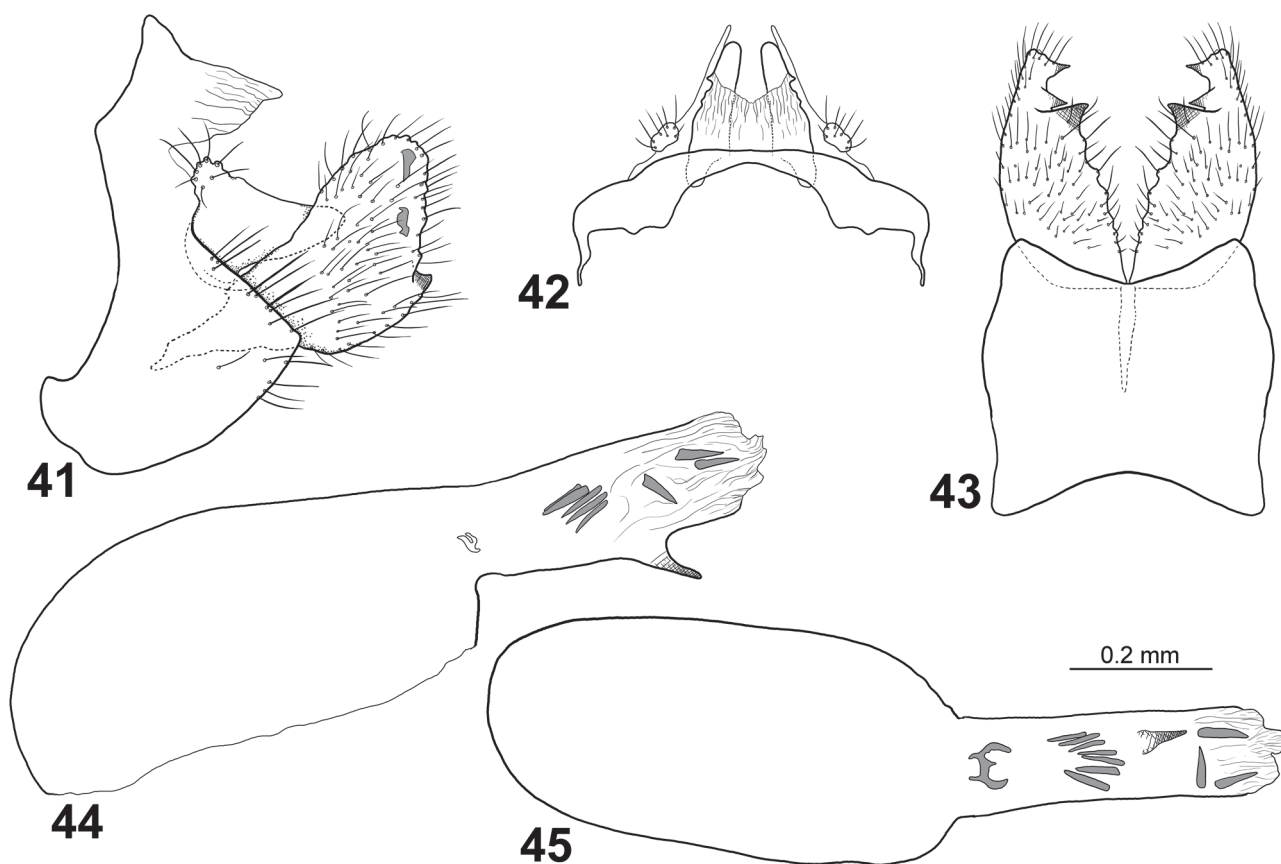
FIGURES 36–40. *Chimarra vitapinensis*, new species, holotype, male. 36—genitalia, left lateral; 37—genitalia, dorsal; 38—genitalia, ventral; 39—phallic apparatus, left lateral; 40—phallic apparatus, ventral.

Chimarra ventrospina, new species

Figs 8, 41–45

Diagnosis. *Chimarra ventrospina* is distinguished from other *Chimarra* species by the presence of a long, strong, well-sclerotized posteroventrad-oriented tooth distally on the phallosome. In addition, the posterior margins of segment IX each forms a large triangle; the mesal lobe of tergum X has a nearly identical shape as the lateral lobes in lateral view; and the lateral lobes of tergum X originate at mid-height of the genitalia. The inferior appendages resemble those of *C. aureofusca* Kimmins, 1957, but *C. ventrospina* is easily separated from *C. aureofusca* by the much shorter segment IX.

Description: Wings (Fig. 8): Forewings each 5.0 mm long, membrane uniformly grey; veins brown. Hind wings each 4.2 mm long, membrane uniformly pale grey; veins brown.



FIGURES 41–45. *Chimarra ventrospina*, new species, holotype, male. 41—genitalia, left lateral; 42—genitalia, dorsal; 43—genitalia, ventral; 44—phallic apparatus, left lateral; 45—phallic apparatus, ventral.

Male Genitalia (Figs 36–40): Segment IX rather short, each side with anteroventral part slightly produced anterodorsad in lateral view (Fig. 41); anterodorsal margins concave, except with 2 pairs of triangular projections subdorsally; ventral margin strongly convex and rounded in lateral view, without ventral process; below each preanal appendage posterior margin forming large, right-angled triangular plate pointing posterad; setae restricted to marginal area of posterior triangular plate; in ventral view (Fig. 43) segment IX about uniformly wide along its length, with undulated lateral margins and widely and shallowly concave posterior margin; anterior margin concave; in dorsal view (Fig. 42) tergum IX very short, forming narrow, transverse band above tergum X; lateral margins nearly parallel, each lateral margin tapering at anterior apex. Anterior apodemes absent. Preanal appendages originating from basodorsal margin of lateral lobes of tergum X, about 0.05 mm long, directed dorsad; irregularly rounded in lateral view (Fig. 41), narrower in dorsal view (Fig. 42). Tergum X divided into thick, membranous mesal lobe and pair of sclerotized lateral lobes (Figs 41, 42). Mesal lobe triangular in lateral view, about half as long as and located well above lateral lobes (Fig. 41), pointing posterad, without setae; nearly rectangular in dorsal view (Fig. 42), with posteromesal incision. Lateral lobes without setae, originating from mid-height of segment IX; in lateral view (Fig. 41), each lateral lobe about as high as mesal lobe, weakly curving posterodorsad, uniformly narrowing apically, apex rounded; in dorsal view (Fig. 42), lateral lobes straight, slightly converging, each forming narrow lateral plate outside mesal lobe, and broader mesal plate below mesal lobe; lateral and mesal margins nearly straight. Lateral lobes well separated basally; sensillae on lateral lobes not detected. Inferior appendages with long central plate (Fig. 41); anteriorly pointed in lateral view; inferior appendages forming rounded plates, slightly longer than high, each appendage with 3 mesad-oriented dark, triangular teeth along posterior margin, the ventral one forming a posteroventral tooth in lateral view (Fig. 41); dorsal and ventral margin above posteroventral tooth hyperboloid; in ventral view (Fig. 43) inferior appendages oriented posterad, almost parallel, with smoothly convex lateral margins; mesobasal plate long, broad, with irregular mesal margin; posteroventral tooth located

at posterior end of meso-basal plate. Sclerotized portion of phallic apparatus long, thick; phallobase occupying almost 2/3rds of phallosome, almost 3 times thicker than cylindrical posterior part of phallosome (Figs 44, 45); posteroventral margin of phallosome with long, strong, well-sclerotized posteroventrad-oriented tooth (Figs 44, 45). Phallosomal sclerite complex small, 3-branched, vertical in lateral view; in ventral view nearly H-shaped with small additional posterior spine on transverse bar; numerous endothecal spines present distally in retracted phallosome; about 7, anterad-pointing spines in group immediately anterior of ventral marginal tooth; 3 posterad-pointing spines in group at transverse zone between phallosome and endotheca, immediately posterior of ventral marginal tooth.

Holotype male: Solomon Islands: Western Province, Kolombangara Island, stream crossing main road, 200 m N road L2, 158 m, loc 06, 8°04.520'S 157°08.845'E, Malaise trap, 11–15.i.2008 [M Espeland].

Etymology. *Ventrosmina*, from *venter*, “underside” in Latin; and *smina*, thorn or spine in Latin; referring to the ventral spine of the phallobase.

***Chimarra solomonensis*, new species**

Figs 9, 46–50

Diagnosis: This species is characterized among the *Chimarra* species from the Solomon Islands by the combination of segment IX oblong, rhomboid in lateral view, and inferior appendages long, triangular in lateral view and nearly rectangular in ventral view. *Chimarra* species from the Fiji Islands, like *C. manni* (Banks, 1924) and *C. obscurella* (Banks, 1924), and the E Australian *C. australica* Ulmer, 1916, have similar triangular inferior appendages, but a shorter and more rounded segment IX.

Description: Wings (Fig. 9): Forewings each 5.0 mm long, membrane uniformly grey; veins brown. Hind wings each 4.1 mm long, membrane uniformly pale grey; veins brown.

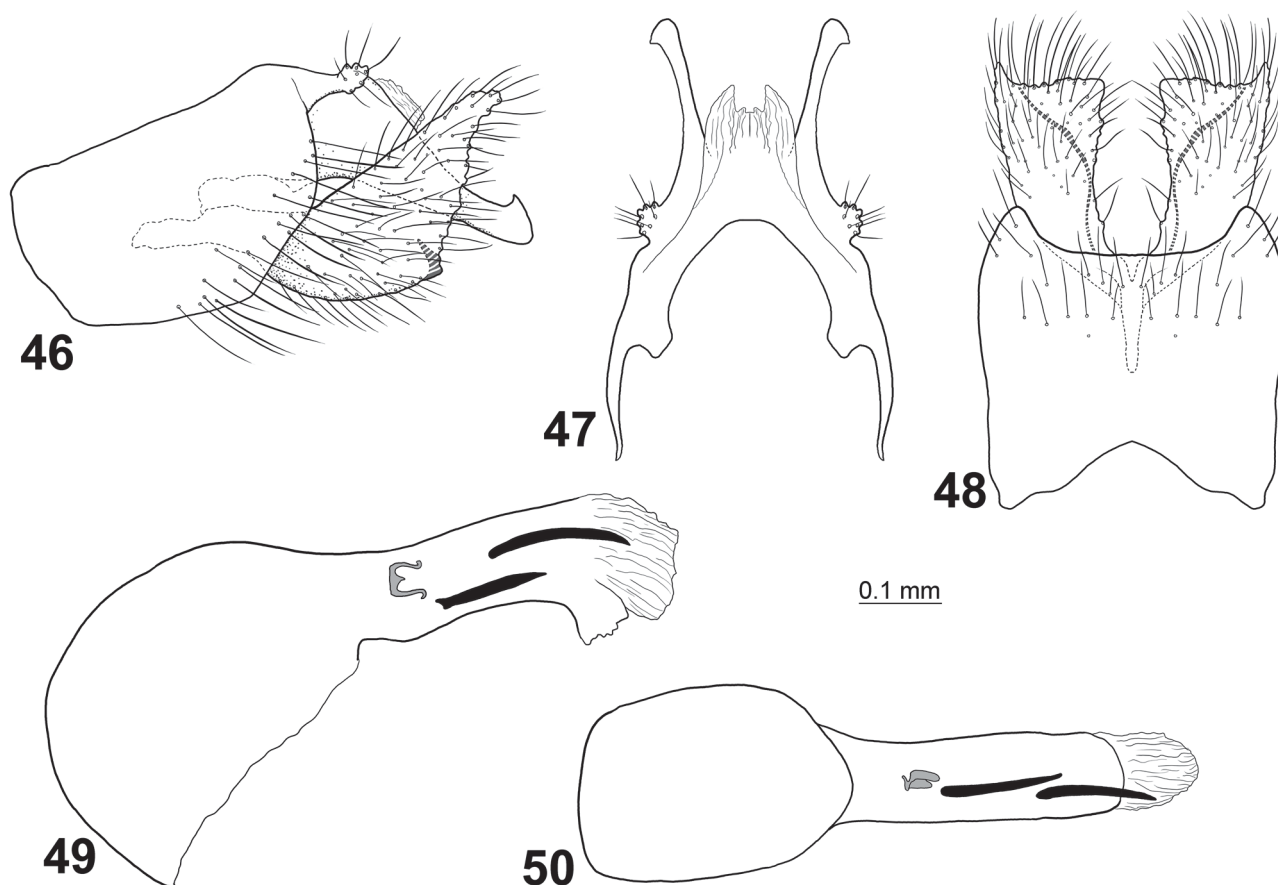
Male Genitalia (Figs 46–50): Segment IX long, nearly rectangular in lateral view (Fig. 46); each side with anterodorsal margin nearly straight, anterior margin rounded, ventral margin nearly straight and rounded in lateral view, without ventral process; below each preanal appendage posterior margin forming short, nearly rounded convex plate; setae present along each posterior margin from well below preanal appendage; in ventral view (Fig. 48) segment IX about as wide as long, nearly uniformly wide along its length, with slightly rounded lateral margins at posterior ends; posterior margin widely and shallowly concave; anterior margin with wide triangular incision; in dorsal view (Fig. 47) tergum IX very short, forming narrow, transverse band above tergum X; lateral margins slightly convex, each lateral plate narrow anteriorly. Pair of anterior apodemes visible in dorsal view at U-shaped mesal margin, each located about 0.1 mm anteriorly of preanal appendages. Preanal appendages originating from posterodorsal end of tergum IX and base of dorsal margin of tergum X, about 0.05 mm long, oriented directed posterad; each with irregularly dilated apex in lateral view (Fig. 46), forming short, irregular wart in dorsal view (Fig. 47). Tergum X divided into membranous mesal lobe and pair of sclerotized lateral lobes (Figs 46, 47). Mesal lobe visible in lateral view as oblong tissue immediately above basal part of lateral lobes, about 1/3rd as long as lateral lobes (Fig. 46), without setae; basally parallel-sided, narrowing apically in dorsal view (Fig. 47), with wide posteromesal incision. Lateral lobes without setae, originating from dorsal part of segment IX; in lateral view (Fig. 46), each lateral lobe broad at base, narrowing apically, oriented posteroventrally, apex forming dorsal hook; in dorsal view (Fig. 47), lateral lobes uniformly curving laterad, each forming narrow lateral plate outside mesal lobe; lateral and mesal margins of each lateral lobe nearly parallel-sided. Lateral lobes well separated basally; sensillae on lateral lobes not detected. Inferior appendages with long central plate (Fig. 46); irregular anteriorly in lateral view; inferior appendages forming large, sharp triangular plates, pointing posterodorsally, nearly twice as long as high; each appendage with dark ridge running transversely on dorsal face of mesobasal plates (Fig. 48), forming dark spot at posteroventral corner of inferior appendages in lateral view (Fig. 46); dorsal and ventral margins above dark ridge nearly straight; in ventral view (Fig. 48) inferior appendages nearly rectangular, oriented posterad, almost parallel, with nearly straight lateral margins; each with mesobasal plate long, uniformly broad, with irregularly concave mesal margin. Sclerotized portion of phallic apparatus long, thick;

phallobase occupying about half length of phallotheca, almost 3 times thicker than cylindrical posterior part of phallotheca (Figs 49, 50); posteroventral margin of phallotheca produced ventrally into irregular, rectangular plate in lateral view (Fig. 49). Phallotremal sclerite complex small, slender, U-shaped with small additional posterior spine on transverse bar; 2-branched in ventral view; 2 large, posterad-pointing endothelial spines present distally in phallotremal sclerite complex.

Holotype male: Solomon Islands: Western Province, Kolombangara Island, stream parallel to road L8, 4 km NW main road, 269 m, loc 08, 8°01.233'S 157°08.090'E, light trap, 11.i.2008 [M Espeland].

Paratypes: Solomon Islands: 14 males, Western Province, Kolombangara Island, ENE slope, 1 km W end of road L28, 291 m, loc 01, 7°56.583'S 157°08.427'E, light trap, 7.i.2008 [M Espeland]; 4 males, Western Province, Kolombangara Island, ENE slope, 1 km W end of road L28, 291 m, loc 02, 7°56.583'S 157°08.427'E, light trap, 7.i.2008 [M Espeland]; 4 males, Western Province, Kolombangara Island, ENE slope, 2.5 km W end of road L28, 421 m, loc 03, 7°56.629'S 157°07.603'E, light trap, 8.i.2008 [M Espeland]; 3 males, Western Province, Kolombangara Island, ENE slope, 2.5 km W end of road L28, 421 m, loc 04, 07°56.629'S 157°07.603'E, light trap, 8.i.2008 [M Espeland]; 3 males, Western Province, Kolombangara Island, N slope of Mt. Veve, 2.5 km S end of road L57, 723 m, loc 11, 7°55.494'S 157°02.986'E, light trap, 12.i.2008 [M Espeland]; 2 males, Western Province, Kolombangara Island, Poitete River 200 m WSW Poitete on road L44, 103 m, loc 15, 7°53.440'S 157°07.516'E, light trap, 14.i.2008 [M Espeland]; 1 male, Western Province, Kolombangara Island, Vila River 1 km N Ringi Company Town, 70 m, loc 17, 8°06.382'S 157°07.916'E, light trap, 15.i.2008 [M Espeland]; 1 male, Western Province, Kolombangara Island, Vila River 1 km N Ringi Company Town, 70 m, loc 18, 8°06.382'S 157°07.916'E, light trap, 15.i.2008 [M Espeland]; 10 males, Guadalcanal Province, Guadalcanal, Weather Coast, Kusumba Region, Talin River, 30 m S junction with Rosava River, 70 m, loc 19, 9°36.724'S 159°41.234'E, light trap, 25.i.2008 [M Espeland].

Etymology. *Solomonensis*, from Solomon Islands, the type country of the species.



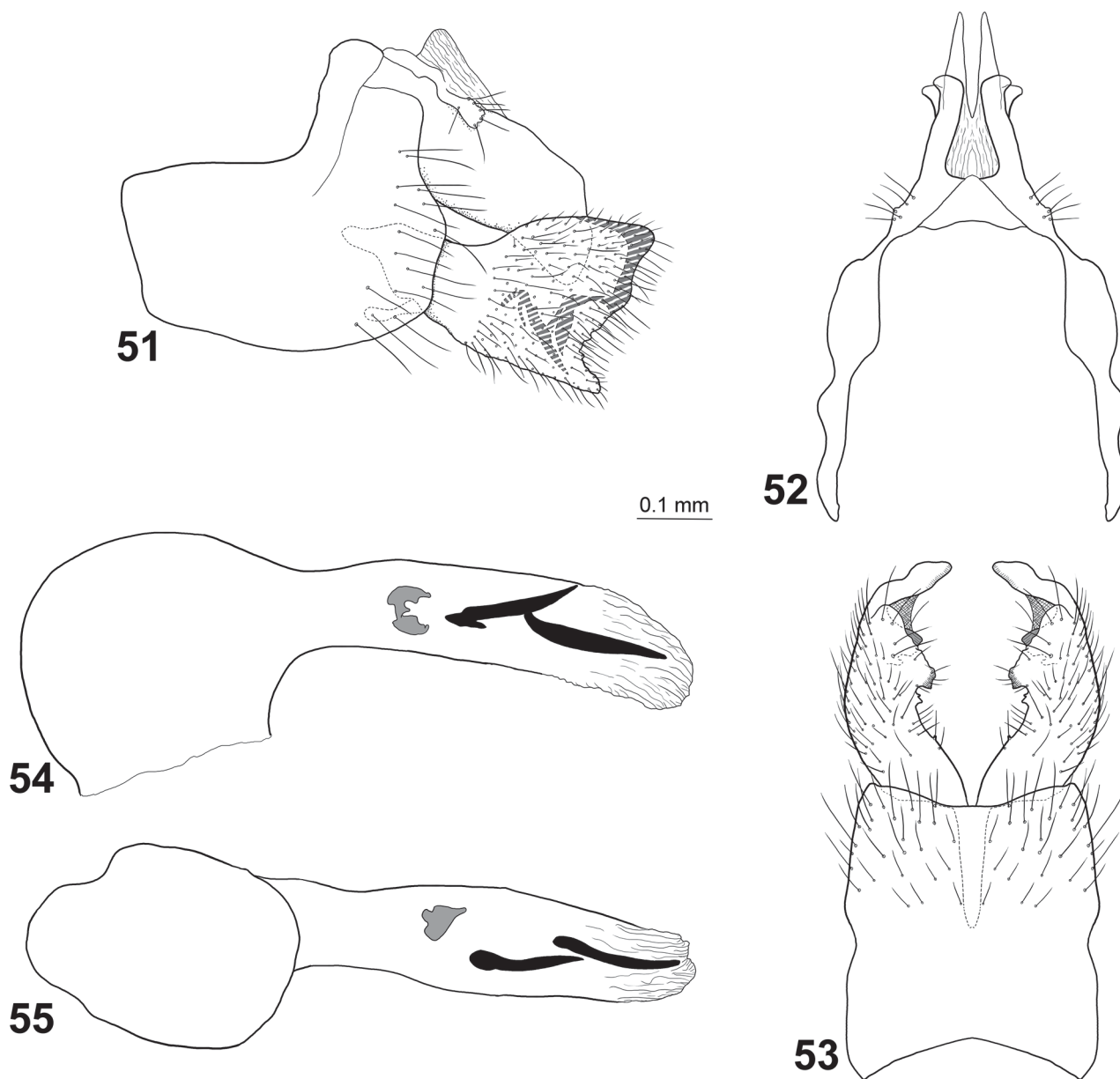
FIGURES 46–50. *Chimarra solomonensis*, new species, holotype, male. 46—genitalia, left lateral; 47—genitalia, dorsal; 48—genitalia, ventral; 49—phallic apparatus, left lateral; 50—phallic apparatus, ventral.

***Chimarra rosavensis*, new species**

Figs 10, 51–53

Diagnosis: This species is unique among the Solomon Island *Chimarra* species in the genitalia, i.e. with anteroventral part of segment IX subrectangular in lateral view and inferior appendages subquadrangular in lateral view. *Chimarra aureofusca* from the Solomon Islands has similar inferior appendages, but in that species the anteroventral part of segment IX is sharply triangular, and tergum X has slender lateral lobes. The Australian species *C. adaluma* Cartwright, 2002, and *C. yoolumba* Cartwright, 2002, both have similarly shaped inferior appendages in lateral view, but these have a shorter segment IX.

Description: Wings (Fig. 10): Forewings each 4.0 mm long, membrane uniformly grey; veins brown. Hind wings each 3.4 mm long, membrane uniformly pale grey; veins brown.



FIGURES 51–55. *Chimarra rosavensis*, new species, holotype, male. 51—genitalia, left lateral; 52—genitalia, dorsal; 53—genitalia, ventral; 54—phallic apparatus, left lateral; 55—phallic apparatus, ventral.

Male Genitalia (Figs 51–55): Segment IX long, L-shaped in lateral view (Fig. 51); each side with anteroventral part produced anterad into rectangular plate; in lateral view (Fig. 51) each side with anterodorsal

and anterior margins nearly straight, ventral margin weakly convex, without ventral process; below each preanal appendage posterior margin irregular; setae present along each posterior margin from well below preanal appendage; in ventral view (Fig. 53) segment IX slightly longer than wide, nearly uniformly wide along its length, except incised at mid-length; anterolateral and posterolateral corners pointed; posterior margin widely and shallowly concave; anterior margin with wide triangular incision; in dorsal view (Fig. 52) tergum IX short, forming membranous transverse band above tergum X; lateral margins undulating, each lateral plate narrow anteriorly. Dorsal plate, possibly representing anterior apodemes, visible in lateral view as vertical lobe immediately anterior of tergum X; in dorsal view (Fig. 52) forming posteriorly pointing triangle. Preanal appendages originating from basodorsal margins of tergum X, nearly 0.1 mm long, directed posterad; with irregular shape in lateral view (Fig. 51), forming shallow, irregular warts in dorsal view (Fig. 52). Tergum X about as long as inferior appendages; divided into membranous mesal lobe and pair of sclerotized lateral lobes (Figs 51, 52). Mesal lobe visible in lateral view as triangular tissue immediately above preanal appendages, about 1/3rd as long as lateral lobes (Fig. 51), without setae; in dorsal view (Fig. 52) located between lateral lobes, narrowing posteriorly, with narrow posteromesal incision. Lateral lobes without setae, originating from dorsal part of segment IX; in lateral view (Fig. 51), each lateral lobe broad from base, rectangular, narrowing immediately before apex, oriented posteroventrad, apex rounded; in dorsal view (Fig. 52), ventral part of each lateral lobe straight, tapering, nearly parallel apically; dorsal part apparently distinct from ventral part, forming converging processes with laterad-curving apices. Lateral lobes apparently fused basally; sensillae on lateral lobes not observed. Inferior appendages with short central plate (Fig. 51); irregularly narrowing anteriorly in lateral view; inferior appendages forming pair of broad, nearly quadrangular plates on short basal stalk; each appendage with dark sclerotized ridge running along posterodorsal corner; each appendage with 2 dark sclerotized, irregular ridges present centrally on mesal face (Fig. 51), forming dark spots and bands visible in lateral view; each appendage with almost straight dorsal and ventral margins; posterior margin with shallow dorsal and deep ventral incision (Fig. 51). Sclerotized portion of phallic apparatus long; phallobase thick, occupying nearly half length of phallosome; in lateral view 3 times thicker than cylindrical posterior part of phallosome (Figs 54); in ventral view (Fig. 55) about 2 times thicker than cylindrical posterior part of phallosome; posterior part of phallosome cylindrical. Phallosomal sclerite complex large, thick, irregularly U-shaped in lateral view; in ventral view forming irregularly shaped plate; 2 large, posterad-pointing endothecal spines present distally in phallosomal sclerite complex.

Holotype male: Solomon Islands: Guadalcanal Province, Guadalcanal, Weather Coast, Kusumba Region, Talin River, 30 m S junction with Rosava River, 70 m, loc 19, 9°36.724'S 159°41.234'E, light trap, 25.i.2008 [M Espeland].

Etymology. *Rosavensis*, from Rosava River, the type locality of the species.

***Chimarra biramosa* Kimmins**

Chimarra biramosa Kimmins 1957: 292.

New records: Solomon Islands: 5 males, Western Province, Kolombangara Island, ENE slope, 1 km W end of road L28, 291 m, loc 01, 7°56.583'S 157°08.427'E, light trap, 7.i.2008 [M Espeland]; 4 males, Western Province, Kolombangara Island, ENE slope, 1 km W end of road L28, 291 m, loc 02, 7°56.583'S 157°08.427'E, light trap, 7.i.2008 [M Espeland]; 1 male, Western Province, Kolombangara Island, ENE slope, 2.5 km W end of road L28, 421 m, loc 04, 07°56.629'S 157°07.603'E, light trap, 8.i.2008 [M Espeland]; 12 males, Western Province, Kolombangara Island, stream crossing main road, 200 m N road L2, 158 m, loc 06, 8°04.520'S 157°08.845'E, Malaise trap, 11–15.i.2008 [M Espeland]; 10 males, 22 females, Western Province, Kolombangara Island, stream crossing main road 1.5 km NE road L2, 90 m, loc 07, 8°04.404'S 157°09.623'E, light trap, 11.i.2008 [M Espeland]; 2 males, Western Province, Kolombangara Island, stream parallel to road L8, 4 km NW main road, 269 m, loc 08, 8°01.233'S 157°08.090'E, light trap, 11.i.2008 [M Espeland]; 4 males, Western Province, Kolombangara Island, Babare River 1 km W main road between roads L5 and L6, loc 09, light trap, 13.i.2008 [M Espeland]; 9 males, Western Province, Kolombangara Island, stream between

roads R3 and R3A, crossing main road 2 km N Shadow River, loc 10, light trap, 14.i.2008 [M Espeland]; 1 male, Western Province, Kolombangara Island, Poitete River 200 m WSW Poitete on road L44, 99 m, loc 16, 7°53.375'S 157°07.529'E, light trap, 14.i.2008 [M Espeland]; 1 male, Guadalcanal Province, Guadalcanal, Weather Coast, Kusumba Region, Talin River, 30 m S junction with Rosava River, 70 m, loc 19, 9°36.724'S 159°41.234'E, light trap, 25.i.2008 [M Espeland].

Acknowledgements

We are grateful to Mr. Fred Pitisopa (Forestry Department Honiara, Solomon Islands) for all his help with fieldwork and permits. Vaeno Vigulu (Kolombangara Forest Products Ltd.) generously provided transportation and field assistants on Kolombangara. Frank Mandu (Forestry Department Honiara) kindly helped with transport and access to his village on Guadalcanal. The two anonymous referees and Dr. John C. Morse gave valuable comments on the manuscript.

References

- Banks, N. (1924) Descriptions of new neuropteroid insects. *Bulletin of the Museum of Comparative Zoology*, 65, 421–455.
- Banks, N. (1939) New genera and species of neuropteroid insects. *Bulletin of the Museum of Comparative Zoology*, 85, 437–504.
- Blahnik, R.J. (1998) A revision of the Neotropical species of the genus *Chimarra*, subgenus *Chimarra* (Trichoptera: Philopotamidae). *Memoirs of the American Entomological Institute*, 59, 1–318.
- Botosaneanu, L. & Vos, R. de (2006) A conspicuous new caddisfly species (Trichoptera: Philopotamidae) from Papua (Indonesian New Guinea). *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Entomologie*, 76, 135–140.
- Cartwright, D.I. (2001) Four new species and a new record of *Chimarra* Stephens (Trichoptera: Philopotamidae) from Bougainville Island, Papua New Guinea. *Memoirs of the Museum of Victoria*, 58, 223–230.
- Cartwright, D.I. (2002) The Australian species of *Chimarra* Stephens (Trichoptera: Philopotamidae). *Memoirs of the Museum of Victoria*, 59, 393–437.
- Kimmins, D.E. (1957) Neuroptera and Trichoptera collected by Mr. J.D. Bradley on Guadalcanal Island, 1953–54. *Bulletin of the British Museum Natural History, Entomology*, 5, 287–308.
- Kimmins, D.E. (1962) Miss L.E. Cheesman's expeditions to New Guinea. Trichoptera. *Bulletin of the British Museum Natural History, Entomology*, 11, 99–187.
- Oláh, J., Johanson, K.A. & Barnard, P.C. (2006) Revision of the South Pacific endemic genera *Orthopsyche* McFarlane 1976, *Abacaria* Mosely 1941 and *Caledopsyche* Kimmins 1953 with the description of 29 new species (Trichoptera: Hydropsychidae). *Zootaxa*, 1356, 1–78.
- Pictet, F. (1834) *Recherches pour servir a l'histoire et a l'anatomie des Phryganides*. Genève, 1–325.
- Stephens, J.F. (1829) *A Systematic Catalogue of British Insects*. Pt 1. London: Baldwin 416 pp.
- Taylor, B. & Maffi, M. (1978) A review of the Mosquito fauna of the Solomon Islands (Diptera: Culicidae). *Pacific Insects*, 19, 165–248.
- Ulmer, G. (1916) Results of Dr. E. Mjöberg's Swedish Scientific expedition to Australia 1910–1913. Trichoptera. *Arkiv för Zoologi*, 10, 1–23.